

IN THE CLAIMS

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B1 1. (Amended) An optical integrated circuit, comprising:

a substrate;

a plurality of dies; and

a template layer attached to a top ~~side~~ of the substrate for aligning the dies by contacting the dies during placement of the dies on the template layer and the substrate, the template layer having a plurality of apertures for receiving the dies, self-alignment features for guiding the dies during placement, and having walls substantially perpendicular to a surface of the substrate for contacting sides of the dies after placement, whereby said dies are precisely located with respect to each other along a the surface of the substrate.

2. (Amended) The optical integrated circuit of Claim 1, wherein the optical ~~the~~ integrated circuit is a mirror array and the dies are mirror sub-arrays.

3. (Amended) The optical integrated circuit of Claim 1, wherein ~~the template layer has~~ the apertures are rectangular apertures for accepting the plurality of dies.

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4. (Unchanged) The optical integrated circuit of Claim 1, wherein the template layer has protrusions perpendicular to the mounting surface of the substrate for guiding the dies during placement.

5. (Unchanged) The optical integrated circuit of Claim 4, wherein the protrusions are tapered, having a narrow end farthest from the substrate, so that the dies may self-align as the dies are guided toward the substrate.

6. (Unchanged) The optical integrated circuit of Claim 5, wherein the template layer has rectangular apertures for accepting the plurality of dies, and wherein walls of the rectangular apertures are formed by the protrusions.

7. (Unchanged) The optical integrated circuit of Claim 1, further comprising an adhesive layer for attaching the dies to the substrate, and wherein the adhesive layer is cut to provide vents to permit the escape of gas during mounting of the dies.

8. (Unchanged) The optical integrated circuit of Claim 1, wherein the substrate has perforations for permitting the escape of gas during mounting of the dies.

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9. (Unchanged) The optical integrated circuit of Claim 1, wherein the template layer is bonded to the substrate by an eutectoid layer.

10. (Unchanged) The optical integrated circuit of Claim 1, wherein the template layer is an epitaxially grown semiconductor layer.

11. (Unchanged) The optical integrated circuit of Claim 1, wherein the template layer is an etched metal layer.

12. (Unchanged) The optical integrated circuit of Claim 1, wherein the template layer is a stamped metal layer.

13. (Amended) An optical integrated circuit, comprising:

a substrate;

a plurality of dies;

means for aligning the dies during placement of the dies on the template layer and substrate; and

means for retaining the dies in precise alignment with respect to each other after placement.

Claims 14-26 were previously canceled.

27. (Unchanged) An optical integrated circuit, comprising:  
a substrate;  
a plurality of mirror sub-arrays; and  
means attached to a top layer of the substrate for aligning  
the plurality of mirror sub-arrays during placement of the  
plurality of mirror sub-arrays; and  
means for retaining the mirror sub-arrays in precise  
alignment with respect to each other after placement.

B<sup>3</sup> 28. (Amended) The optical integrated circuit of Claim 27, wherein  
the aligning and retaining means are provided in ~~is~~ a template  
layer having rectangular apertures for receiving the plurality of  
mirror sub-arrays.

29. (Amended) The optical integrated circuit of Claim 27, wherein  
the aligning means has protrusions perpendicular to the mounting  
surface of the substrate for guiding the plurality of mirror sub-  
arrays during placement.

30. (Unchanged) The optical integrated circuit of Claim 29,  
wherein the protrusions are tapered, having a narrow end farthest  
from the substrate, so that the mirror sub-arrays are guided  
toward the substrate.

B4 31. (Amended) The optical integrated circuit of Claim 30, wherein the retaining means has rectangular apertures for accepting the plurality of mirror sub-arrays, and wherein walls of the rectangular apertures are formed by the protrusions.

32. (Unchanged) The optical integrated circuit of Claim 27, further comprising an adhesive layer for attaching the plurality of mirror sub-arrays to the substrate.

33. (Unchanged) The optical integrated circuit of Claim 32, wherein the adhesive layer is cut to provide vents to permit the escape of gas during mounting of the plurality of mirror sub-arrays.

34. (Unchanged) The optical integrated circuit of Claim 27, wherein the substrate has perforations for permitting the escape of gas during mounting of the plurality of mirror sub-arrays.

B3 35. (Amended) The optical integrated circuit of Claim 27, wherein the retaining means and the aligning means are ~~is~~ bonded to the substrate by an eutectoid layer.

36. (Amended) The optical integrated circuit of Claim 27, wherein  
the retaining means and the aligning means are provided in ~~is~~ an  
epitaxially grown semiconductor layer.

37. (Amended) The optical integrated circuit of Claim 27, wherein  
the retaining means and the aligning means are provided in ~~is~~ an  
etched metal layer.

38. (Amended) The optical integrated circuit of Claim 27, wherein  
the retaining means and the aligning means are provided in ~~is~~ a  
stamped metal layer.

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